

FLOWERING ANNUALS FOR WYOMING



Pelargonium

B-1170R

Revised April 2021 Karen Panter, Extension Horticulture Specialist, Department of Plant Sciences, University of Wyoming Chris Hilgert, Extension Educator, Department of Plant Sciences, University of Wyoming For bright splashes of color all summer, nothing beats annuals. Though many are technically perennials that simply won't survive cold Wyoming winters, so we refer to them as annuals.

The botanical definition of an annual plant is one that germinates from seed; grows and develops; forms flowers, fruits, and seeds; and then dies all in one growing season. True annuals include sunflowers while others, like impatiens, are perennial in their native Central America but are treated as annuals here.

Annuals are highly important in Wyoming gardens and landscapes because of their diversity in foliage color and texture, flower color and size, and adaptability. Annual blossoms are quite colorful and plants will bloom all growing season. There are hundreds of species and cultivars available, most of which will thrive in Wyoming.

Annual flower gardens require planning and care. An annual garden, by its very nature, is very different from a perennial garden. Annuals bloom all summer long and must be replanted each spring and cleaned out each fall.

Wyoming's climate can be stressful for many plants. Low rainfall, low humidity, high wind and high solar radiation, not to mention late frosts in spring and early frosts in fall, can make gardening with annuals a challenge. A short growing season often limits plant growth. Plus, local soils almost always need improvement to support gardens used each year for annuals.

SOIL AND BED PREPARATION

Even though annuals are only in the ground for one growing season, pre-plant soil preparation is still important. Most annual flowers grow best in moderately fertile, well-drained soil. Wyoming soils are often low in organic matter, nitrogen and, sometimes, available phosphorus. Some have poor drainage and high soluble salts. These problems need to be corrected before planting. The work involved in proper soil preparation will pay dividends every year.

Have a soil test done. Contact the local county office of the University of Wyoming Extension (UWE) for

Be cautious about the type of organic matter used in an annual garden. Compost varies dramatically from batch to batch and location to location. Any compost used should be well aged, and there should be no identifiable individual components in the compost. Sometimes lawn clippings are composted. This is acceptable as long as there are no herbicide residues in the clippings. Herbicide residues may not break down quickly and can heavily damage annuals, herbaceous perennials and other plants. Avoid mountain peat; use Canadian sphagnum peat instead. Mountain peat is mined from natural bogs in mountain areas. It is frequently heavy, does not drain well, and often contains high levels of soluble salts. It is best left in the mountains.



assistance. A test will report the soil texture, organic matter percentage, available phosphorus and nitrogen, pH, soluble salt level and lime content. Recommendations will be included for fertilizer applications, if needed, along with other soil modifications.

Most Wyoming soils are heavy clay, but occasionally sandy types occur. The best method for improving either clay or sandy soils is to add good quality organic matter. This can be well-aged compost, peat moss, or any clean, well-composted organic material. The usual recommendation is to add a layer 2 to 3 inches thick on the top of the garden bed and then spade or till it in to a depth of about 6 inches. With annual gardens, this should be done each year. Never add sand as a soil amendment. Fertilization may or may not be necessary, depending upon the results of the soil test.

PLANTING

Even with annual flowers, it is helpful to have a plan drawn up before plants are purchased. A bit of planning on paper may be beneficial. Always consider the mature height, spread, flower color, water needs and light requirements of plants. Mass planting groups of plants of one species and color will produce an eye-catching display.

When purchasing plant material, buy from reputable retailers. Make sure the plants have been properly cared for by the retailer. Foliage should be healthy and green; check for signs of insect or disease damage. Also look to see if the roots are healthy and white and that the plant is rooted to the bottom of the container or cell pack. Look for signs of stress including leaf tip burning or wilting, which may indicate inadequate watering.

Always purchase plants with proper labels on them. Labeling should include a plant's Latin name, one or more common names, picture, height and width at maturity, planting spacing, exposure needs, fertilizer needs, water requirements, and any other important information specific to that plant. If a label is not present, choose something else.

The vast majority of flowering annuals are not cold tolerant, so wait to plant them until after the last local frost date (see sidebar). Carefully remove each plant from its container or cell pack and plant it no deeper than it was in the original pot or pack. Circling roots can be gently unwound and root-bound roots can be loosened. Lightly firm the soil around the plant. After planting is complete, water each plant carefully and thoroughly. This does two things: it provides water for the plant in its new home, and it settles the soil in around the root system, minimizing air pockets.

WATERING

Regular irrigation is recommended for the best performance of many flowering annuals. This is especially important for the first week or two as the plant is becoming established in the garden. There are no hard and fast rules of thumb for irrigating annuals simply because of their great diversity. If in doubt, follow instructions on the label or carefully dig down 4 to 6 inches in the flower bed to determine how dry the soil is. If it is moist on top, wait another day. If it is dry all the way down, it is time to water thoroughly. Infrequent, thorough, deep watering is always preferred over frequent, shallow irrigations. Try to water in the morning as watering at night leaves foliage wet which can foster disease development.

It is helpful to plant annuals with similar water requirements together in zones. Those requiring little additional water should be planted together, those requiring moderate moisture should be in the same zone, and those with high water requirements should be in their own zone. This makes it much easier to water plants according to their needs, especially if an automated system is used.

Watering can be accomplished in several ways. Hand watering is probably the most inefficient, but many municipalities require this method during periods of drought. The reason is gardeners won't accidentally forget to turn the sprinkler off if *they* are the sprinkler.

Setting a hose and sprinkler out for a specified amount of time is also acceptable but can lead to over- or under-irrigation. Automatic sprinkler systems set up for turf areas may also work, but care must be taken to make sure the garden area is covered. Unfortunately, this type of watering is usually on a schedule rather than based on plant needs. Learn how to set or reset the timer as needed throughout the growing season.

An excellent option is drip irrigation. Many types are available today that will afford thorough coverage

with little evaporation, however, a drip system requires maintenance as emitters will sometimes clog. Replacement is usually necessary after a few years because the tubing will break down over time with Wyoming's high solar radiation and rapid temperature fluctuations. Soaker hoses are another good option. These can be hidden under mulch and may last somewhat longer than drip hoses.

MULCHING

Using mulches during the growing season will slow the loss of water, prevent soil drying and cracking, reduce weak plant growth, prevent soil splashing, and provide a



Spider flower

neat and well-kept appearance. Many kinds of mulch are available including organic types such as bark chunks, pine needles, ground corn cobs, wood chips or compost. Organic mulches are beneficial in that they return nutrients to the soil as they break down. Be aware that some, like pine needles or any small organic matter, may blow away in high winds. Mulch must allow water and oxygen to penetrate into the soil below, and it should decompose slowly. A layer 2 inches thick is ideal.

There are disadvantages to organic mulches. In some locations in Wyoming, the soil may stay too cool under mulch. With cool soil, root growth may be inhibited which in turn limits shoot growth. If cool soils are a problem, wait until the sun has warmed the soil in late spring to apply mulch. Also, certain pests like slugs may hide in some mulches.

Inorganic mulches are also available but are not as highly recommended. These are permanent unless moved, will not decompose, and may impede water and oxygen penetration into the root zone underneath. Inorganic mulches include crushed rock, marble chips and various sizes of gravel. Plastics are not recommended because they do not allow water or oxygen to penetrate to plant roots. Even landscape fabrics are not recommended by some landscapers. Although they do allow water and oxygen to penetrate into the soil and also minimize weed problems early on, fabrics make it difficult to plant



Transvaal daisy—also known as gerbera daisy

or replant. Their purpose is often defeated as soil and other organic matter builds up on top, leading to weed problems later.

DEADHEADING

Deadheading is the process of removing spent flowers. It helps keep plants looking neat and also diverts energy to new blooms. Annuals tend to send their energy to seed production as their flowers fade. If deadheading is done regularly, the plants redirect their energy back into producing more flowers. Use clean, sharp scissors or shears and cut just below the spent flowers, making sure not to remove more than 1/3 of the plant at any one time.

FERTILIZING

Annuals differ widely in their fertilization needs. The label on a plant should state the fertilizer needs of the plant in the container. A soil test will provide the information necessary to determine if the flower bed needs any nutrients. If fertilizer is needed, there are many acceptable types on the market. Always read and follow label directions and be careful not to over fertilize. Too much fertilizer leads to spindly, weak, tender plant growth that will not hold up in Wyoming's climate. Also, too much fertilizer is known to contribute to downstream pollution and algal blooms. If in doubt, don't fertilize or at least use minimal amounts.

Some of the types available in retail stores include liquid or dry concentrates, liquid ready-to-use, granular and slow release. Dry or liquid mix-your-own kinds tend to be the least expensive and are the easiest to over apply. More is definitely not better. Slow release types are more expensive but generally one application in the spring is sufficient to last the growing season.

Many organic fertilizers are available but tend to be lower in nutrient content. Manures and composts can be used. Manure, if not aged properly, can be very high in soluble salts, leading to burned plant roots. Composts decompose, and an additional nitrogen source may be required for annual plants to thrive. This is because microbes decomposing the organic matter can easily use up any available soil nitrogen leaving little to none for the plants.

STAKING

Few annuals will require staking. If needed for taller plants, use stakes 6 to 12 inches shorter than the

full-grown stems. Use several stakes around the plants. Always use soft cotton cord, jute, or wide plastic, and never wire. Tie one end of the cord to a stake and then surround the plant until it is encircled by the cord, thus holding up the plant.

PESTS

Weeds can be managed by starting with clean soil and weed-free plant material and organic matter. Regular cultivation and hand weeding will usually be needed through the growing season. Using a good layer of mulch often minimizes weed problems, as does placing plants close together. Both of these strategies minimize sunlight penetration to weed seeds, which, in turn, keeps them from germinating and growing. Sometimes using mulches such as straw, manure, and hay can aggravate weed problems because weed seeds are often found in them. If possible, avoid using these materials if weeds are a problem.

Insect pests can sometimes gather in large enough numbers to injure flowering annuals. In a well-watered and well-tended garden, some insects may thrive. The best defense is actually a good offense—keeping annuals healthy in the first place. Plants are like people in this respect. If they are stressed by too much or too little water, fertilizer, sun, or shade, they are much more susceptible to injury from insects and diseases. For this reason, proper fertilizing, watering and spacing are very important.

Simply by scouting and monitoring the plants in a garden frequently, one can find many insect pests and begin proper treatments. Be aware many insects in the garden are actually beneficial. Few of them create problems for annuals. For this reason, proper identification of an insect is crucial and remedies may or may not be warranted. Contact a local UWE office for insect diagnostic assistance.

Diseases in the annual flower garden can be minimized by proper watering, fertilizing, spacing, plant selection and sanitation. Occasional outbreaks of diseases can frequently be managed through changes in watering or other cultural practices. There are many types of diseases caused by fungi, bacteria and viruses. Viruses cannot be managed other than by removing and destroying an affected plant. Any suspected plant disease should be checked by a knowledgeable diagnostician. Contact a local UWE office for further diagnostic help. Never compost diseased plant materials because the causal organisms may not be killed by the process.

FALL CLEAN-UP

Removing annual plants after fall dieback helps to minimize disease and insect problems for the following season. Sometimes, insects and diseases over-winter on plant parts left in the garden. By removing these in the fall, the chances of reinfection in the next growing season will be less. If the annuals were healthy, they can be composted after removal from the garden.

WINTER CARE

Winter care for annual beds? Definitely.

Clean out the plants after dieback in the fall. Then add another layer of mulch. It will help keep the soil underneath moist during the winter and will also minimize temperature fluctuations. Plus, it will be there in the spring when new annuals are ready to be planted.



Sweet alyssum and snapdragons in a window box

ANNUALS IN CONTAINERS

Annuals work beautifully in many types of containers, from large Grecian urns to hanging baskets. Many retail garden centers sell ready-to-go container gardens full of assorted flowering annuals. Hanging baskets are also available in many different sizes, many with several varieties of plants in them. Changing container collections during the season can lend new and exciting visual appeal.

The trick to container gardening is to use good, clean, soilless growing media (also avoid sand). These potting mixes are lightweight, already clean, and many provide starter fertilizers to jump start plant growth. Always use containers with drainage holes in the bottom, and never put anything over the drainage hole (clay pot shard, layer of gravel, etc.) as these actually decrease drainage and may lead to root rotting problems.

Plants in a container of any sort will dry out quicker than plants in the ground, so attention to watering is crucial.

A hanging basket in a sunny location will need water every day. Fertilizing may or may not need to be done, depending on the plant material. An easy way to fertilize containerized plants is to use a slow-release, granular fertilizer. If applied at planting time in the spring, these are usually sufficient to carry the plants through the growing season.

Hydrophilic gels are frequently sold as products that will increase a container's ability to hold water. Studies have shown mixed results, often with no difference in days between watering's between media containing gels and media with no gels incorporated. They can be expensive and hard to work with, especially when they are wet. They also tend to break down over time, especially with high levels of fertility or salts in irrigation water. For further information on container gardening, see UW Extension bulletin B-1239 *Landscaping: Container Gardening*, bit.ly/uwyo_containergarden.



SUGGESTED FLOWERING ANNUALS

The following table includes annual flowering plants that survive and thrive in Wyoming.

Latin name	Common name	Height	Spread	Flower color	Exposure	Water
Ageratum houstonianum	Flossflower, ageratum	6″-2′	1′	blue, pink, white	sun, part shade	regular
Alternanthera tenella	Garden alternanthera, joyweed	6″–1′	8″	red, bronze	sun	moderate
Amaranthus tricolor	Joseph's coat, amaranth	1′-4′	18″	red and green	sun, part shade	regular
Antirrhinum majus	Snapdragon	6″-3′	6″–2′	wide range available	sun	regular
Arctotis stoechadifolia (A. venusta, Venidium fastuosum)	African daisy, blue-eyed daisy, arctotis	2′	18″	white with yellow-blue or yellow-purple center	sun	moderate
Begonia spp.	Fibrous-rooted begonia, wax begonia, wax plant	6″–1′	10″	range from white to red	part shade	regular
Brachyscome (Brachycome) iberidifolia	Swan River daisy	1′	18″	blue, white, pink	sun	regular
Brassica oleracea	Flowering kale, ornamental kale	1′–2′	1′-2′	grown for foliage	sun, part shade	regular
Browallia speciosa	Browallia, amethyst flower, sapphire flower	1′–2′	1′	purple, blue, indigo, white	part shade	regular
Calendula officinalis	Calendula, pot marigold	1′–2′	1′–2′	cream, apricot, yellow, gold	sun	moderate
Calibrachoa officinalis	Million bells, calibrachoa	6″–1′	2′	wide range	sun, part shade	regular
Callistephus chinensis	China aster, annual aster	8″–3′	10″–18″	white, blue, purple, scarlet	sun	regular
Campanula medium (C. grandiflora)	Canterbury bells	1′–2′	1′–2′	white, blue	sun, part shade	regular
Catharanthus roseus (Vinca rosea)	Madagascar periwinkle, rose periwinkle	1′–2′	1′–2′	white, pink, rose	sun, part shade	moderate
Celosia	Cockscomb	6″–3′	6″–18″	pink, orange, red, gold, yellow, purple	sun	moderate
Clarkia amoena	Godetia	6″–24″	6″–1′	pink, lavender	sun	regular

Latin name	Common name	Height	Spread	Flower color	Exposure	Water
Cleome hassleriana (C. spinosa)	Cleome, spider flower	4'-6'	4′–5′	white, rose, red, cherry, purple	sun	regular
Coleus x hybridus (Solenostemon scutellarioides)	Coleus	1′–2′	1′–2′	grown for colored foliage	part shade	regular
Cordyline indivisa	Spike, dracaena	18″–24″	12″–18″	grown for foliage	sun, part shade	regular
Coreopsis tinctoria	Annual tickseed, calliopsis	18″–3′	12″–18″	yellow, orange, maroon, bronze, red	sun	little
Cosmos sulphureus	Cosmos	18″–7′	18″–30″	yellow, orange-yellow	sun	moderate
Cuphea ignea	Cigar plant, cigar flower	1′	1′	orange-red	sun, part shade	regular
Cynoglossum amabile	Chinese forget-me-not	1′–2′	1′	white, pink, blue	sun	regular
Dahlia spp.	Garden dahlia	1′–7′	1′–3′	various colors and flower forms	sun, part shade	regular
<i>Dianthus</i> spp.	Dianthus, Sweet William, pinks	6″–24″	6″–12″	various colors and plant forms	sun	regular
Diascia barberae	Twinspur	10″–20″	Rose pink	sun, part shade	moderate	
Dimorphotheca sinuata	African daisy, cape marigold	4″–12″	4″–12″	white, yellow, orange	sun	moderate
Dyssodia tenuiloba (Thymophylla tenuiloba)	Dahlberg daisy, golden fleece	1′	18″	yellow	sun	moderate
Eschscholzia californica	California poppy	8″–24″	12″–18″	white, yellow, orange	sun	little
Eustoma grandiflorum (Lisianthus russellianus)	Lisianthus	1′–3′	1′	blue, pink, white, rose	sun, part shade	regular
Fuchsia x hybrida	Fuchsia, lady's eardrops	Some upright, some trailing	Varies with plant form	white, red, pink, bicolor	part shade	regular
Gaillardia pulchella (G. drummondii)	Annual gaillardia, blanket flower	18″–2′	1′	red, yellow, gold	sun	moderate
Gerbera jamesonii	Transvaal daisy, gerbera daisy	18″	12″	cream, yellow, coral, orange, red	sun, part shade	regular
Gomphrena globosa	Gomphrena, globe amaranth	1′–2′	1′	white, pink, red, purple	sun, part shade	moderate
Helianthus annuus	Sunflower	2′–10′	1′	white, yellow, red, bicolor	sun	regular

Latin name	Common name	Height	Spread	Flower color	Exposure	Water
Helichrysum bracteatum	Strawflower	2′–3′	1′	yellow, orange, red, pink, white	sun	moderate
Heliotropum arborescens	Common heliotrope	18″–2′	12″–18″	violet, purple, blue, white	sun, part shade	regular
Iberis umbellata	Globe candytuft, annual candytuft	12″–15″	9″	white, pink, rose, crimson, salmon, lilac	sun, part shade	regular
Impatiens spp.	Garden balsam, New Guinea impatiens, Busy Lizzie	8″–30″	6″–2′	white, pink, rose, lilac, red, orange, lavender, purple; some grown for variegated foliage	part shade, shade	regular
Ipomoea spp.	Morning glory, sweet potato vine	Vines to 15′	Blue, lavender, pink, red, white	sweet potato grown for colored foliage	sun	regular
Lantana	Lantana	6″–12″	1′–3′	white, yellow, pink, lavender, orange, red	sun	moderate
Lathyrus odoratus	Annual sweet pea	Vines to 5'	White, cream, salmon, rose, blue, purple, scarlet	sun	regular	
Lavatera trimestris	Annual mallow	3′-6′	3'-6'	white, pink, rose	sun	regular
Limonium sinuatum	Annual statice	18″	1′	blue, lavender, rose, yellow, peach, purple, white	sun	moderate
Lobelia erinus	Lobelia, edging Iobelia	6″	9″–18″	blue, violet, white	sun, part shade	regular
Lobularia maritima (Alyssum maritimum)	Sweet alyssum	1′	1′	white, pink, violet	sun	regular
Lunaria annua (L. biennis)	Money plant, silver dollar plant	18″-3′	1′	purple, white	sun, part shade	little
Matthiola incana	Stock, gillyflower	1′–3′	10″–16″	white, pink, red, purple, lavender, blue, yellow, cream	sun, part shade	regular
Mimulus x hybridus	Monkey flower	1′	1′	cream, rose, orange, yellow, scarlet	part shade, shade	regular
Mirabilis jalapa	Four o'clock	3′	3′	white, red, pink, yellow	sun	little
Moluccella laevis	Bells of Ireland,	1′–2′	10″	green	sun	regular
	Irish bells					
Myosotis sylvatica Nemesia strumosa	Forget-me-not Nemesia	6″–12″ 18″	2′ 1′	blue all but green	part shade	regular regular

Latin name	Common name	Height	Spread	Flower color	Exposure	Water
Nicotiana alata	Flowering tobacco, ornamental tobacco	1′–4′	1′	white, pink, red, green	sun, part shade	regular
Nierembergia hippomanica (N. caerulea)	Nierembergia, cupflower	6″–12″	6″–12″	blue, violet	sun	regular
Osteospermum barberae (Dimorphotheca barberae)	African daisy	4″–20″	1′–2′	white, pink, purple	sun	regular
Pelargonium spp.	Geranium, Regal geranium, zonal geranium, ivy geranium, scented geranium	1′–3′	1'-4' some upright, some trailing	wide variety	sun	regular
Pennisetum setaceum rubrum (P. ruppelii)	Purple fountain grass	3′	3′	grown for foliage	sun, part shade	moderate
Pentas lanceolata	Star clusters, pentas	2′–3′	2′–3′	white, pink, lilac, red	sun	regular
Petunia x hybrida	Petunia	2'-3'	2'–3', some upright, some trailing	white, cream, yellow, reds, blues, purples, bicolor	sun	regular
Phlox drummondii	Annual phlox, Drummond phlox	6″–18″	10″–12″	pastels except blue	sun	regular
Portulaca grandiflora	Moss rose, portulaca, sun plant	6″	18″	white, red, pink, orange, yellow	sun	moderate
Primula spp.	Annual primrose	6″–12″	6″–12″	white, cream, pink, yellow, red, blue	part shade, shade	regular
Salpiglossis sinuata	Painted tongue	2'-3'	1′	red, orange, yellow, purple, pink	sun	regular
Salvia splendens	Scarlet sage, red salvia	1′–3′	1′–2′	white, red, salmon, pink, purple	sun	regular
Sanvitalia procumbens	Creeping zinnia, trailing sanvitalia	6″	18″	yellow, orange	sun	moderate
Scabiosa atropurpurea	Annual pincushion flower	2′	1′	white, rose, salmon, purple	sun	moderate
Scaevola	Scaevola	6″	3′	blue, white	sun	moderate

Latin name	Common name	Height	Spread	Flower color	Exposure	Water
Schizanthus pinnatus	Poor man's orchid, butterfly flower	18″	1′	white, pink, rose, lilac, purple	part shade	regular
Senecio cineraria (Centaurea maritima, Cineraria maritima)	Dusty miller	2'-3'	2'-3'	grown for silvery gray foliage	sun	moderate
Senecio x hybridus	Cineraria	1′–2′	1′–2′	white, pink, red, blue, purple	part shade, shade	regular
Stokesia laevis	Stokes aster	1′-2′	18″	white, blue, purple	sun	regular
Sutera cordata	Васора	6″	2′–3′	white, yellow, lavender	sun, part shade	regular
<i>Tagetes</i> spp.	African marigold, French marigold	6″–3′	6″–2′	cream, yellow, gold, orange, maroon	sun	moderate
Thunbergia alata	Black-eyed Susan vine	Vine	3′	white, yellow, orange	sun, part shade	regular
Tithonia rotundifolia	Mexican sunflower, tithonia	4′	3′	gold, orange, yellow	sun	regular
Torenia fournieri	Wishbone flower, torenia	1′	1′	white, lavender	sun, part shade	regular
Tropaeolum majus	Nasturtium, Indian cress	18″	18″ some trailing	white, yellow, orange, red, maroon	sun, part shade	regular
Verbena x hybrida	Garden verbena	6″–12″	18″–3′	white, pink, red, purple, blue	sun	moderate
Vinca major	Vinca vine	Trailing to 4′	Grown for variegated foliage	sun, part shade	moderate	
Viola x wittrockiana	Pansy	6″–10″	9″–12″	white, blue, red, rose, yellow, apricot, purple	sun, part shade	regular
Zinnia spp.	Zinnia	1′–4′	1′-2′	white, pink, salmon, rose, red, yellow, orange, lavender, purple	sun	regular



Zinnias



B-1170R

Revised April 2021

Karen Panter, Extension Horticulture Specialist, Department of Plant Sciences, University of Wyoming

Chris Hilgert, Extension Educator, Department of Plant Sciences, University of Wyoming

Editor: Katie Shockley, University of Wyoming Extension

Design: Tanya Engel, University of Wyoming Extension

Revised from B-1170, February 2006. Karen Panter, Extension Horticulture Specialist, Department of Plant Sciences, University of Wyoming.

Issued in furtherance of extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Kelly Crane, director, University of Wyoming Extension, University of Wyoming, Laramie, Wyoming 82071. • The University's policy has been, and will continue to be, one of nondiscrimination, offering equal opportunity to all employees and applicants for employment on the basis of their demonstrated ability and competence without regard to such matters as race, sex, gender, color, religion, national origin, disability, age, veteran status, sexual orientation, genetic information, political belief, or other status protected by state and federal statutes or University Regulations. • Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by University of Wyoming is implied. • Shutterstock.com: MaCross-Photography, Kostenko Maxim, jular seesulai, 501room, S1001, Linda Hughes Photography, Hani Santosa.